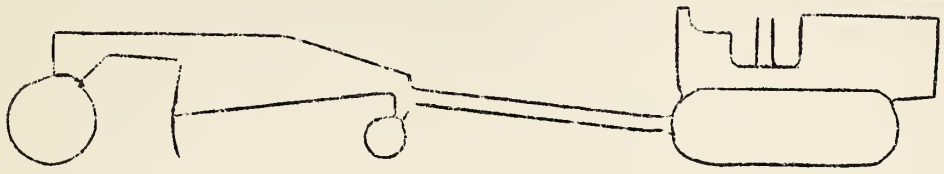
CONSTRUCTION



HINTS

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

Vol. 2 Washington, D. C. July 11, 1936. No. 14

CAUSE OF HOT MOTORS
Region 9

The Forest Supervisor of the Manistee National Forest has found in many cases that the cause of motors running hot is due to the rusting and sticking of the thermostatically operated heat control within the manifold. This has also caused burned valves and cracked valve seats.

We are now checking this instrument every one thousand miles and at the same time checking plugs, distributor points, and valve timing.

NOTICE TO CONTRIBUTORS

When sending drawings for use in Construction Hints, please do not send blueprints. If you prefer to send in the original drawings, we will make reproductions and return the originals. Even pencil drawings or black-line prints are preferable to blueprints. Thanks.

H. L. Friend - Editor.

RESEARCH REVEALS BETTER WAYS OF BUILDING LOW-COST ROADS
Press Release U.S.D.A. Office of Information
Dated June 23, 1936.

Laboratory research on soil road construction has recently produced much valuable information on the characteristics and effects of the numerous materials that are being experimented with to develop durable low-cost surfaces for secondary highways. Research work is being done by the Bureau of Public Roads of the U. S. Department of Agriculture, and by several State highway departments. Officials of these agencies recognize that highway development has reached a point where greater attention must be given to the roads that lead from the main highways. There are about 2,000,000 miles of unsurfaced road in the country.

The primary materials for the surfaces of soil roads are granular materials and a soil binder, usually clay. Common granular materials are: sand, gravel, cinders, and finely crushed stone or slag.

It has been known for a long time that the granular material made roads stable in wet weather and that clay binder held the surface together in dry weather.

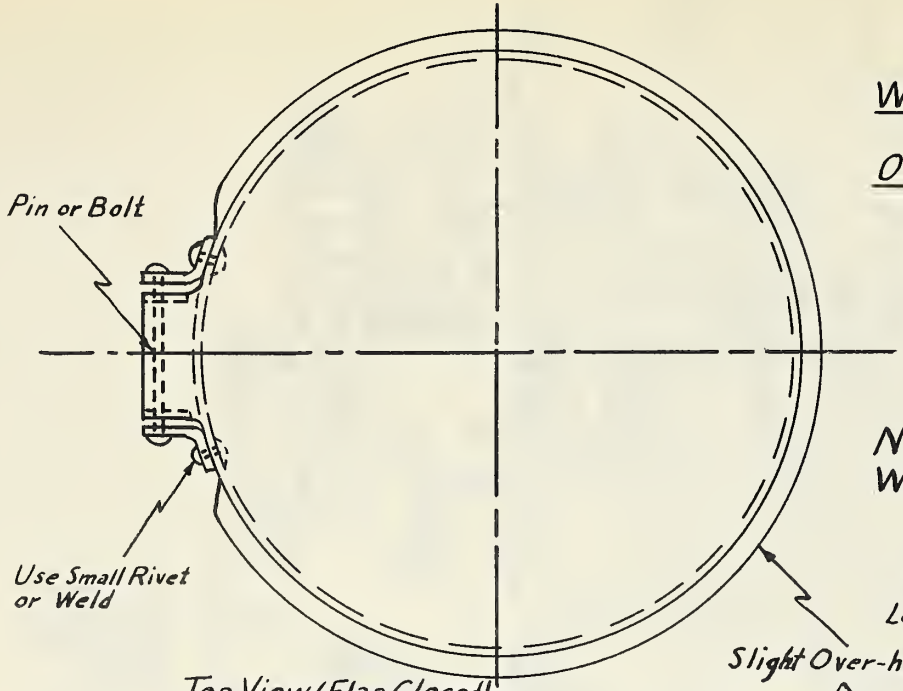
New light is being thrown on the action of thin solidified moisture films in binding particles together, the conditions under which mixtures may be compacted to form dense surfaces and where special materials may be mixed in the surface to advantage.

Various materials are used for different purposes. Among these are bituminous material, Portland cement, slag, lime, limestone dust, common salt, calcium chloride and soap. Each of these materials is used for a particular purpose. Some materials or conditions will require one treatment and some another. Selection of the proper treatment is a job for the engineer with special training in soil work. Methods are still in the development stage and much remains to be learned from field and laboratory experiments.

Research workers do not expect to develop a single simple method or formula that can be applied to all soils everywhere. One of the most important discoveries made is that treatments that are highly desirable under certain chemical or soil conditions are not necessary under other conditions.

The experiments indicate that it will be possible to develop a variety of treatments, suitable for the many different conditions. A technical report entitled "Stabilized Soil Roads" has been issued recently by the Bureau of Public Roads. The report is prepared for use by engineers and summarizes results of field and laboratory research. It is not a manual of instructions for construction of low-type roads.

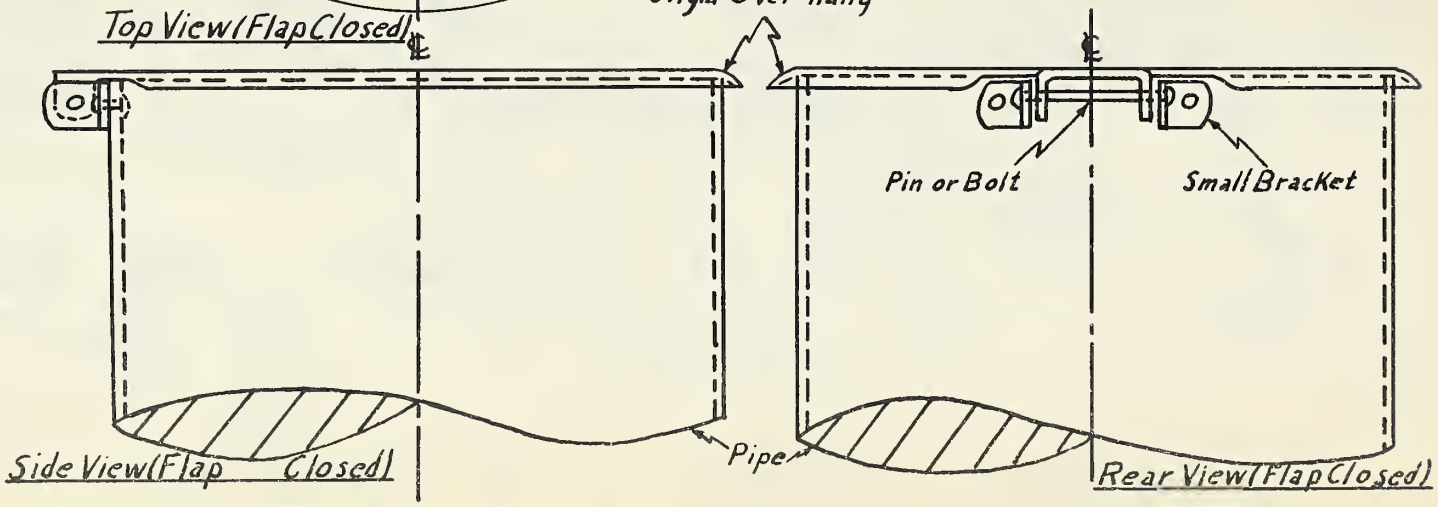
WEATHER PROTECTION FLAP FOR OPEN END EXHAUST & BREATHER PIPES

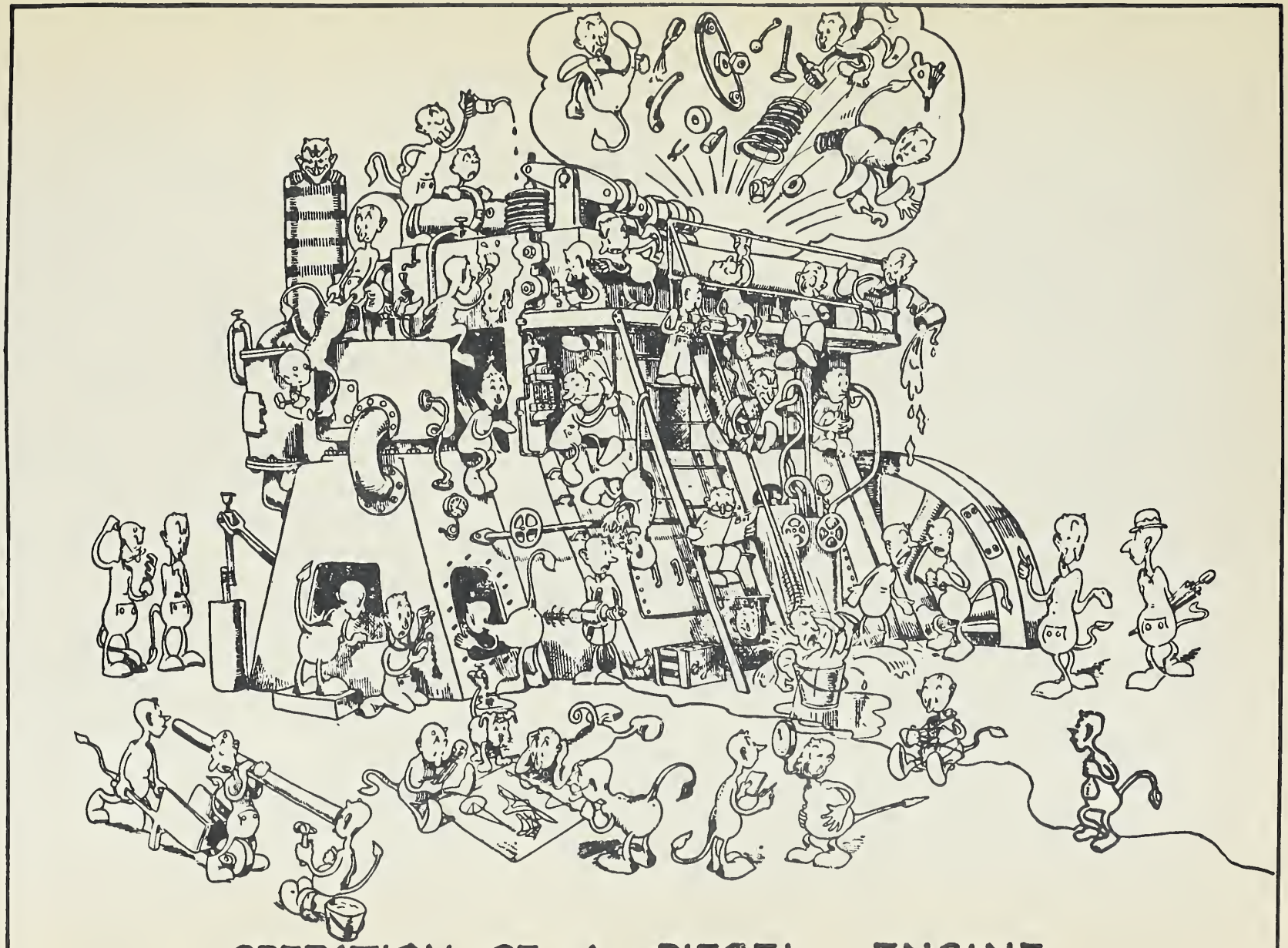


MATERIAL REQ:-
12 Gauge Flat Metal
2 Small Rivets
1 Pin or Bolt

NOTE:- Brackets May Be Either Welded or Riveted To Pipe.

Submitted by:
W. D. Giffen, Forest Ranger
Lost River Purchase Unit - INDIANA





OPERATION OF A DIESEL ENGINE

Compliments of M. R. Comer